

NSR Proposed Amendments

20000222

Background Paper

<i>Background Paper.....</i>	<i>1</i>
Legislative and Regulatory History.....	2
Consolidation of NSR regulations.	4
Petroleum solvent dry cleaning systems fully subject to case-by-case NSR.	5
Issue: Should gasoline dispensing facilities be exempt from NSR?	6
Definition of "new source" to include modifications.....	7
Structure of definitions.....	8
TBACT subsumed into the definition of BACT.....	9
Conversion between stack emission rates (lbs/yr) and ambient concentrations (µg/m3) for SQER and de minimis.	10
De minimis amounts of air contaminants exempt from NSR and SQER amounts exempt from dispersion modeling.	11
Toxic air pollutants in the table that do not have ASILs	12
NSR required for Taps within all industrial classifications, unless expressly excepted.....	13
Providing for class B TAPs in site-specific analysis.....	14

Legislative and Regulatory History

The public policies and purposes of the Washington Clean Air Act were established in 1967, and most recently amended in 1991. RCW 70.94.011 provides that protection of public health is the policy of the state of Washington.

“It is declared to be the public policy to preserve, protect, and enhance the air quality for current and future generations. Air is an essential resource that must be protected from harmful levels of pollution. Improving air quality is a matter of state-wide concern and is in the public interest. It is the intent of this chapter to secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population, to comply with the requirements of the federal Clean Air Act, to prevent injury to plant, animal life, and property, to foster the comfort and convenience of Washington’s inhabitants, to promote the economic and social development of the state, and to facilitate the enjoyment of the natural attractions of the state.”

State agency rule writing general authority was established under the Act in 1967, and most recently amended in 1991. RCW 70.94.331(2)(c), states that Ecology shall:

“adopt by rule, air quality standards and emission standards for the control or prohibition of emissions to the outdoor atmosphere of radionuclides, dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substances, or any combination thereof.”

The 1990 amendments to the federal Clean Air Act established numerous requirements for a nationwide strategy for reducing toxic air pollution. Many of the requirements are to be implemented by state and local authorities, upon receiving approval from the EPA. Among the provisions describing the nationwide toxics program is section 112(b), which lists 190 toxic chemicals to be addressed by the program. The 1991 Washington Clean Air Act amendments affected several provisions of the rule governing sources of toxic air pollution.

RCW 70.94.152, first enacted in 1967, and last amended in 1993, provides for NSR as follows:

“(1) The department of ecology or board of any authority may require notice of the establishment of any proposed new sources . . .

* * *

(3) Within thirty days of receipt of a notice of construction application, the department of ecology or board may require, as a condition precedent to the establishment of the new source or sources covered thereby, the submission of plans, specifications, and such other information as it deems necessary to determine whether the proposed new source will be in accord with applicable rules and regulations in force under this chapter. . . .

* * *

(10) Best available control technology (BACT) is required for new sources except where the federal clean air act requires compliance with the lowest achievable emission rate (LAER).”

(11) No person is required to submit a notice of construction or receive approval for a new source that is deemed by the department of ecology or board to have de minimis impact on air quality. The department of ecology shall adopt and periodically update rules identifying categories of de minimis new sources. The department of ecology may identify de minimus new sources by category, size, or emission thresholds.

(12) For purposes of this section, "de minimus new sources" means new sources with trivial levels of emissions that do not pose a threat to human health or the environment.

The NSR general regulations at WAC 173-400-110 were first filed in December of 1976, and last amended effective January of 1998. WAC 173-400-110(5) provides that *de minimis* exemption levels for toxic air pollutants are specified in WAC 173-460, but there are no *de minimis* exemptions in WAC 173-460. The change in WAC 173-400-110 anticipated this current rule change.

The NSR toxic air pollutant regulations at WAC 173-460 were first effective in September 1991. Amendments were last adopted January 12, 1994. Ecology has imposed upon itself the requirement to review the ASILs. WAC 173-460-120(1) states:

(a) To use the best available scientific information, ecology shall conduct an ongoing review of information concerning whether to add or delete toxic air pollutants to WAC 173-460-150 or WAC 173-460-160, what acceptable source impact levels should be used to review emissions of TAPs, source applicability and exemptions.

(b) A complete review shall be made at least once every three years at which time ecology shall consider scientific information developed by the E.P.A., Washington department of health, other states or other scientific organizations, scientific information provided by any person, and results of second tier analyses evaluations.

Significant amendments must be consistent with the principles and objectives of Office of the Governor Executive Order 97-02 on regulatory improvement. The evaluation criteria are need, effectiveness and efficiency, clarity, intent and statutory authority, coordination, cost, and fairness. This rule amendment must be developed consistent with the executive order.

Consolidation of NSR regulations.

Fact: The NSR regulations are presently located in both WAC 173-400 and -460. Chapter 400 contains many topics, including general definitions, registration program, public involvement, criminal penalties, appeals, and NSR. Chapter 460 contains NSR for toxics.

Discussion: There is a consensus that all NSR regulations should be consolidated. Consolidation would result in bringing together:

- NSR for all air pollutants, including toxic and criteria,
- requirements for new sources in attainment, unclassified, and nonattainment areas,
- PSD, and
- NSR fees.

Consolidation would not include sections that relate not only to new sources, but also to existing sources, such as:

- NESHAPS,
- emission trading.

Locating all NSR in chapter 400 is undesirable because that chapter contains an unfocused collection of subjects. Consolidating NSR in chapter 460 is undesirable because of section numbering complications, and possible confusion with 460's toxic NSR identity. Creating a new chapter devoted to NSR is desirable because no section numbering complications are presented, and because the chapter can focus on, and fully encompass, the topic of NSR.

Amendment: Create a new chapter, 465, devoted only to, and encompassing all NSR.

Structure of NSR chapter: The new structure of the consolidated NSR chapter provides for a more sequential analysis of a proposed new or modified source. The 000 series of sections are administrative; purpose, definitions, fees, etc. The 100 series of sections ask "is NSR applicable," and if so, lays out the permit procedures. The 200 series contains substantive requirements that would go into a permit. The 300 series is the specialized permitting requirements for toxic air pollutants.

Petroleum solvent dry cleaning systems fully subject to case-by-case NSR.

Facts: Petroleum solvent dry cleaners have a "generic" BACT in WAC 173-460-060. WAC 173-460-030(2)(c) exempts them from emission quantification (050), the ambient impact requirement (070), ambient impact compliance (080), and tier-2 (090).

Discussion: The definition of petroleum dry-cleaner has become clouded as the industry has introduced new technologies. Non-perchloroethylene dry-cleaners use many solvents, some of which are of toxic concern, and some of which are of VOC concern. The utility of the existing generic BACT for this industry is limited, and updating it may not be worth the effort.

Amendment: Eliminate the generic BACT for petroleum solvent dry-cleaners, and subject non-perchloroethylene dry-cleaners to full NSR.

Issue: Should gasoline dispensing facilities be exempt from NSR?

Facts: Two state rules specifically require gasoline vapor controls at gasoline stations, WAC 173-490 (VOCs) for non-attainment areas, and WAC 173-491 (gasoline vapors) for attainment areas. WAC 173-460 exempts new or modified gasoline stations operating under WAC 173-490, but not those subject to WAC 173-491.

Discussion:

Some of the local air pollution control agencies already interpret 173-460 as exempting gas stations. Some are nonetheless concerned over the impact of large stations.

WAC 174-491-040(5)(c) already contains a 1.5 million gallon per year threshold, which is used for the Stage II requirement. Also, 1.5 million gallons per year is near the threshold where the benzene ASIL may be exceeded.

Amendment: Amend the applicability section to include a complete exemption for WAC 173-490 and -491 applicable gasoline stations with a throughput less than 1.5 million gallons per year, and a partial exemption for those with a throughput greater than 1.5 million gallons. The partial exemption would be implemented by a listing in what is presently WAC 173-460-030(2)(c), the "generic" BACT list.

Definition of "new source" to include modifications.

Status quo: The definition of "new source" currently includes "modifications," another defined term. Yet, throughout the regulations, the subject is redundantly stated as "new or modified source." "Modified source" is not defined. "Modification" is defined.

Discussion: "New source" refers to the creation of new emissions, not simply to whether the source is structurally new. Thus, modification of an existing source can create new emissions, and constitute a new source. The subject might have been called "new emission review," instead of "new source review." The distinguishing point is that only the incremental increase in emissions are subject to regulation. New emissions from a modification would be the incremental emissions, while from an entirely new source, they could be all the emissions.

This redundancy could be eliminated in one of two ways.

Alternatives	Advantages	Disadvantages
Remove "or modified" throughout the text, leaving only "new source."	New sources and modifications are treated the same in the regulations.	Practitioners would have to learn that modifications are included in the term "new source."
Amend the definition of "new source", removing the inclusion of "modification," which is separately defined.	This corresponds with the federal definitions in 40 CFR 51.165[SIP] and 51.166[PSD].	The distinction between new source and modification in minor NSR is obscure.

Amendment: Remove "or modification" from the definition of "new source." Create a new definition of "new or modified source" meaning a "new source" or a source which is a "modification."

Structure of definitions

Principles:

- Definitions that are used only in one chapter should be defined only in that chapter.
- Definitions that are used in multiple chapters should be defined in chapter 400. Cross references to the chapter 400 definitions may be included in the other chapter.
- Terms that are not used should not be defined.
- Terms that are defined should be used as defined.
- Terms that are used once should be defined in the text where they are used, not in the definitions section.
- Definitions in standard dictionaries should not be reiterated in the definitions sections of the regulations.
- Definitions should explain terms, not create rights and duties.
 - Definitions may use the language like “X means”
 - Definitions should not use the proscriptive word “shall,” or other regulatory words. E.g., the definition of "BACT" does not meet this criteria.
- Defined terms should be printed in **bold** wherever they appear in the text of the rule.
- Acronyms should be listed as defined terms in the definitions. They should be defined as what they stand for (e.g., "'**TAP**' means **toxic air pollutant**"). The actual definitions would be with the spelled out term.

TBACT subsumed into the definition of BACT

Status quo: The definition of "best available control technology (BACT)" is statutory.¹ The definition of "best available control technology for toxics (T-BACT)"² originated in 1991 in WAC 173-460.

Discussion: The BACT definition should be moved into its own section because it contains proscriptive mandates. Both definitions apply to "each air pollutant" or each "TAP." The T-BACT definition points out that BACT takes into account the potency quantity and toxicity of each TAP or mixture of TAPs. In the 1991 Responsiveness Summary, p17, Ecology explains that the inclusion of toxicity, amount, and economics is sufficient to exclude small negligible sources from unreasonable requirements. T-BACT clarifies, but does not change the definition of "BACT."

Amendment: The BACT "definition" is in a section of its own. The TAP definition text is added to that section as a subsection, and the T-BACT definition is eliminated. The reference to federal regulations is updated.

¹ WAC 173-400-030(10) and RCW 70.94.030; "**Best available control technology (BACT)**" means an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of the "best available control technology" result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard under 40 CFR Part 60 and Part 61, as they exist on March 1, 1996, or their later enactments as adopted by reference by the director by rule. Emissions from any source utilizing clean fuels, or any other means, to comply with this paragraph shall not be allowed to increase above levels that would have been required under the definition of BACT in the Federal Clean Air Act as it existed prior to enactment of the Clean Air Act Amendments of 1990.

² WAC 173-460-020(4) "**Best available control technology for toxics (T-BACT)**" applies to each toxic air pollutant (TAP) discharged or mixture of TAPs, taking in account the potency quantity and toxicity of each toxic air pollutant or mixture of TAPs discharged in addition to the meaning given in WAC 173-400-030(10).

Conversion between stack emission rates (lbs/yr) and ambient concentrations (µg/m3) for SQER and de minimis.

Status Quo: The SQERs provide a screening tool modeled in consideration of supposed average facility configuration. This resulted in them being too liberal in well over half of the configurations; *i.e.*, they could allow the ASILs to be exceeded for many hypothetical building configurations.

Discussion:

As screening tools, *de minimis* and SQER should be conservative. *De minimis* should avoid all false negatives, facilities that should be permitted, but are not. This would mean that unreviewed facilities could be built causing ambient concentrations of TAPs exceeding the ASILs. SQER could allow some false negatives, because the proposal would be subject to scrutiny during permitting. Dispersion modeling using parameters characterizing an actual facility can be used in more exacting screening.

This site-specific dispersion screening is often run by the permit engineer using data provided by the applicant. The burden of the conservative option is that permit engineers would have to run the screening model more often. (The screening model can be run in a few minutes.) The burden on the applicant is to provide site-specific measurements (which are not always handy).

The output of the dispersion model is a single number. Various combinations of input parameters can result in the same output. Rather than selecting particular inputs for the parameters, it is adequate to select an output that conservatively represents potential facilities.

Amendment: For SQER, use a conversion that represents dispersion from over 99% of the potential hypothetical facility configurations. For *de minimis*, use a conversion factor that represents negligible dispersion.

Note: $69571 \text{ hr/yr} * \text{ASIL } \mu\text{g/m}^3 / \text{Max } \mu\text{g/m}^3 * H$

where ASIL = ASIL

Max = maximum 1-hour concentration from screen-3 model

H = conversion factor from 1-hour to 24-hour or annual

H = 0.4 for 24-hour ASILs

H = 0.08 for annual ASILs

	24-hour	annual
SQER	3.48*ASIL	17.38*ASIL
<i>de minimis</i>	0.17*ASIL	0.87*ASIL

De minimis amounts of air contaminants exempt from NSR and SQER amounts exempt from dispersion modeling.

Status quo:

History: Ecology did not include a *de minimis* exemption in the 1991 version of chapter 460 because it would have allowed unlimited incremental toxic increases. A subsequent amendment to RCW 70.94.152 provided that no person is required to submit a NOC for a new source that Ecology deemed to have a *de minimis* impact on air quality, and that *de minimis* means "trivial levels of emissions that do not pose a threat to human health or the environment." In 1998, amendments to the NSR provisions of WAC 173-400-110, Ecology implemented *de minimis* for criteria pollutants, and paved the way for TAPs *de minimis*.

ASILs: The risk-based ASILs are based on a 1:1,000,000 "upper bound estimate of human cancer risk." The threshold-based ASILs are based on a threshold below which no adverse impact is expected to occur to humans (including sensitive subgroups). The TLV-TWA-based ASILs are based on the level under which "it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects," multiplied by 300 to account for sensitive populations, uncertainty, and 24-hour exposure. ASILs are expressed as ambient concentrations in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

Discussion: *De minimis* and SQER values should be screening factors through which no potentially harmful new sources should pass. ASILs are screening values intended to be protective of human health, including sensitive individuals. The *de minimis* and SQER levels should be expressed as emission rates for each TAP, in pounds per year, to be practical to potential sources. The conversion factor to convert from ambient concentration to emission rate is discussed elsewhere.

Amendment: A *de minimis* and SQER screening level for each TAP should be set corresponding to the ASIL.

Toxic air pollutants in the table that do not have ASILs

Status quo: Permit writers may ignore a toxic when it doesn't have an ASIL.

Discussion: The options are: give the compounds an ASIL; take them out of the table; or state that BACT and quantification is required, but an ambient impact assessment does not have to be made for compounds without an ASIL. The first two options are beyond the scope of this phase of the rulemaking. The third option reflects the existing rule.

Amendment: The third option is the most practical for this rule making effort. No rule language has been proposed yet. A subsection could be added to proposed WAC 173-465-340 saying:

"If there is no ASIL listed for a TAP in WAC 173-465-380, then there is no ambient impact requirement for that TAP, although the quantification and BACT requirements of this chapter nonetheless apply."

NSR required for Taps within all industrial classifications, unless expressly excepted.

Status quo: Industries of all SICs are subject to the NSR provisions of WAC 173-400-110. Only industries of selected SICs are subject to the NSR provisions of WAC 173-460.³ (Note that the U.S. Census Bureau converted from the SIC system to the NAICS.)

Discussion: To consolidate criteria and toxic NSR, one scheme must be selected. A toxic can be a potential health risk in SICs that are not listed as well as those that are listed. Exempting industries should be based on engineering and risk considerations on a case by case basis. This would not change the substance of the rule if exemptions for industries are specified where appropriate. Identifying those industries for which exemption is appropriate would require stakeholder recommendations.

Amendment: NSR for criteria and toxic pollutants should be required within all industrial classifications that are not expressly excepted.

³ WAC 173-460-030(1)(b)(i).

Providing for class B TAPs in site-specific analysis.

Status quo: The Tier II process only explicitly addresses the cancer risk from Class A TAPs.

Discussion: The risk threshold for class A Taps is lowered from 1:1000000 to 1:100000 in site-specific analysis (tier-2). The absence of any special provision for class B TAPs in site-specific analysis (tier-2) implies that none was intended, and that ASILs would apply.

Amendment: The relevance of class B ASILs in site-specific analysis should be explicit in the proposed site-specific analysis section WAC 173-465-350. No such proposal has yet been advanced.